

June 10, 1947.

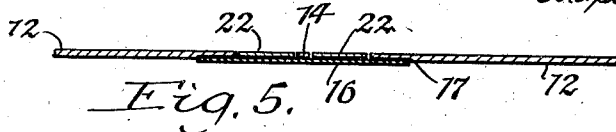
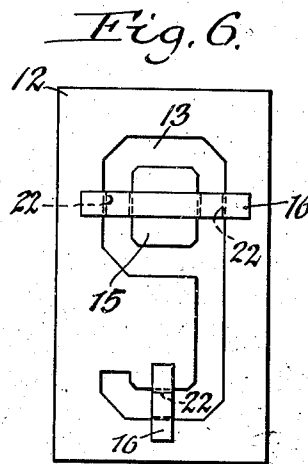
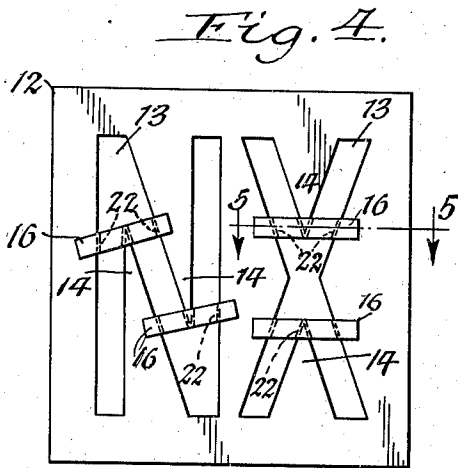
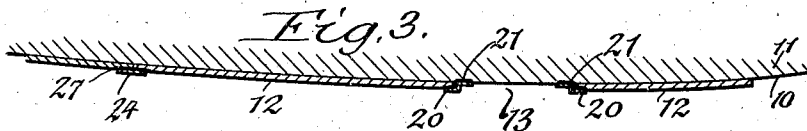
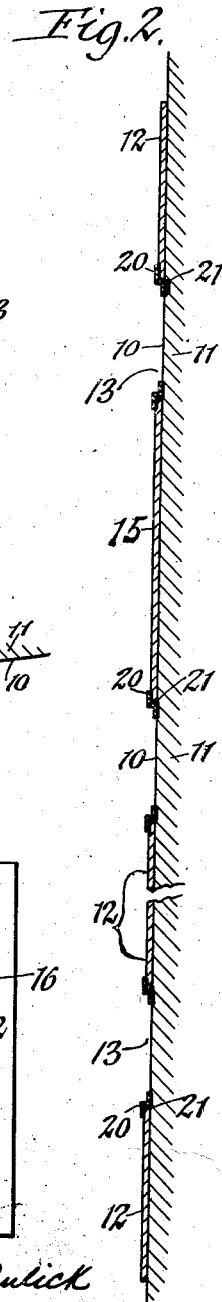
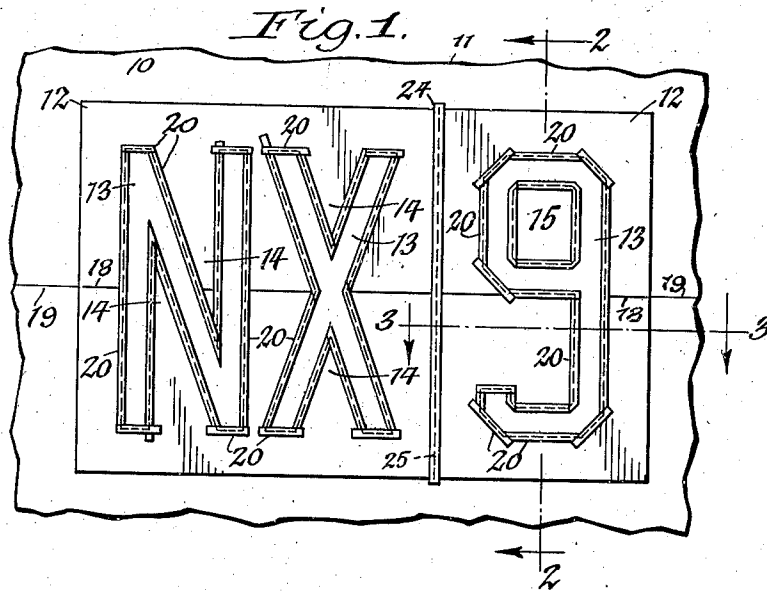
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2,421,825

MEANS FOR APPLYING INDICIA

Filed Nov. 29, 1944

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 7.

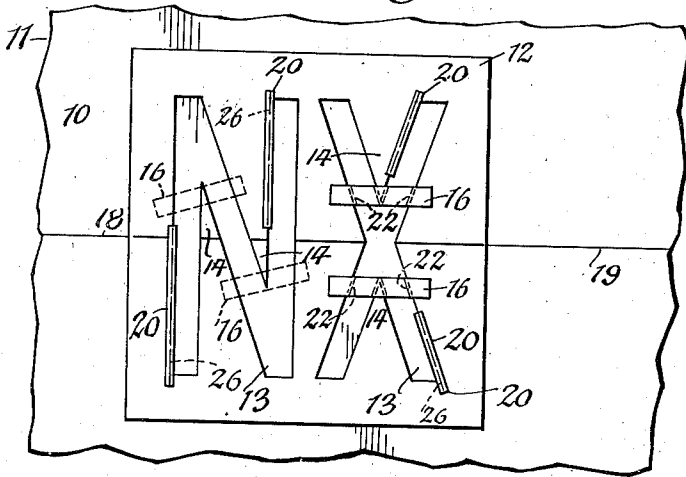


Fig. 9.

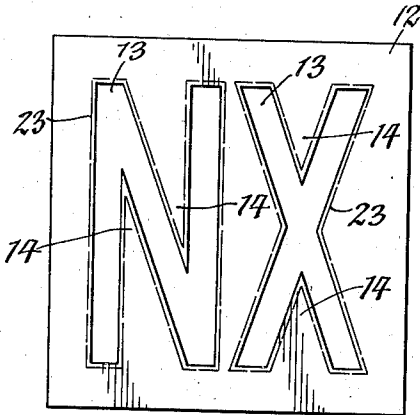
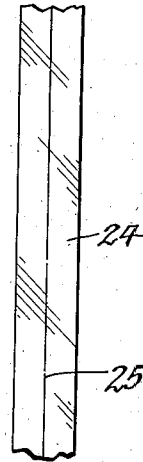


Fig. 8.

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UNITED STATES PATENT OFFICE

2,421,825

MEANS FOR APPLYING INDICIA

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1 Claim. (Cl. 101—127)

1

This invention relates to a method and means for applying indicia on display surfaces and more particularly on curved or uneven surfaces such as are presented by the wings, rudders and fins of airplanes.

Owing to the irregularity of these surfaces on airplanes it is impractical to use ordinary flat stencils for applying identifying marks thereto and it has therefore become the practice to build up a stencil frame of the required emblem, word or letter by means of paper strips and masking tape within the border of which frame the paint or marking material was applied to the display surface and thereafter this frame was removed from this surface.

This method of defining the mark to be applied to such surfaces has been found slow and expensive and it is therefore the object of this invention to provide an improved method and means whereby this work can be accomplished more efficiently, expeditiously and economically.

In the accompanying drawings:

Fig. 1 is a front view of a completed stencil embodying this invention and applied to the display surface to be marked with an indicia.

Fig. 2 is a vertical section, on an enlarged scale, taken on line 2—2, Fig. 1.

Fig. 3 is a fragmentary horizontal section, on an enlarged scale, taken on line 3—3, Fig. 1.

Fig. 4 is a front view of a stencil sheet section having two stencil openings representing a plurality of characters having slender or narrow marginal parts which are integrally connected with the main part or body of the stencil and are temporarily held against displacement by means of bridge strips preparatory to applying the stencil sheet to the surface to be marked in accordance with this invention.

Fig. 5 is a fragmentary horizontal section, on an enlarged scale, taken on line 5—5, Fig. 4.

Fig. 6 is a front view of a stencil sheet section having a single stencil opening representing a character which includes parts which are loose, floating or isolated from the main body part of the stencil and normally not integrally connected therewith, said main and isolated parts being temporarily held in their proper relative position by means of bridges preparatory to being fastened to the surface to be stencil marked in accordance with this invention.

2

Fig. 7 is a front view of a stencil showing an intermediate stage of the method of fastening the same to the surface intended to receive an indicia and preparatory to producing the indicia thereon by passing marking material through the stencil opening.

Fig. 8 is a front view of a stencil sheet showing one way of properly alining thereon the fastening strips whereby the stencil sheet is secured to the surface to be marked when the fastening strips are made of opaque material.

Fig. 9 is a front view showing a transparent fastening strip for securing a stencil sheet to a display surface and provided with an alining mark whereby the same may be secured to the stencil sheet and the display surface in position for producing the stencil mark properly on this surface.

In the following description similar reference characters indicate like parts in the several figures of the drawings:

The numeral 10 represents the display surface of a body 11, such, for example, as a wing, rudder or fin of an airplane, to which an identifying indicia is to be applied by the means and method of this invention. As shown in Fig. 3, this surface is of convex curved form but this varies in accordance with the shape of the specific part which is to be marked.

In the use of this invention one or more stencil sheets 12 may be employed and each of these may be provided with one or more openings 13 for producing a stencilled reproduction on the display surface to be marked in accordance with the desired indicia. As shown in Fig. 1, two stencil sheets or sections are arranged horizontally side by side on the surface to be marked, one of them having two stencil openings for producing a stencil marking of the letters "NX" and the other a stencil marking of the numeral "9." Each of these stencil sheets is made of pliable sheet material, such as paper or cloth, so that the same when applied to a display surface, can be smoothed out to remove any wrinkles therefrom and cause the same to lie evenly and uniformly on said surface.

Each of these stencil sheets is preferably of oblong rectangular form and when a plurality of them are employed, the vertical opposing edges of the same are engaged with one another to

form a relatively close joint, shown in Fig. 1, when mounted on the display surface.

Preparatory to mounting the stencil sheets on the surface to be marked, the parts of the same which define the shape of the stencil openings thereof are temporarily reinforced by connecting the salient parts of letters, numerals or symbols with the body parts of the stencil and also connecting completely isolated parts of letters, numerals or symbols with the body parts of the stencil sheets, such for example, as the integral slender or delicate salient part 14 of the letters "N" and "X," and the floating island, isolated or normally free member 15 of the numeral 9 which is not integral with the main or body part of this character. The salient parts and free member in this instance are connected with the body parts of the respective stencil sheets by means of bridge strips 16, the rear or inner sides of which are attached by any suitable adhesive or cement 17 to these front or outer sides of these salient parts, free members and bodies of the respective stencil sheets, as shown in Figs. 4, 5 and 7.

Each of these stencil sheets or sections is placed with its rear side against the display surface 10 and smoothed out so that the same contains no wrinkles and its position thereon is properly determined by a locating mark consisting, for example, of a line 19 arranged horizontally across the central part of the front side of the stencil sheet and registering with the corresponding line 18 on an adjacent stencil sheet and also being aligned with a registering line or mark 19 on the display surface, as shown in Fig. 1.

While the stencil sheet or sheets are thus alined on the display surface, the same are attached thereto by fastening means which preferably comprise a plurality of sections 20 of a fastening strip, such as "masking tape" the rear side of which is provided with an adhesive 21. Each of these fastening strip sections is placed lengthwise of a portion of the wall of the stencil opening of a stencil sheet and then the outer longitudinal edge portion of this strip is secured by the adhesive on its rear side to the front side of the stencil sheet along the respective part of the wall of its stencil opening and the inner longitudinal edge portion of this strip is secured by the adhesive on the rear part of the same to the display surface adjacent to this wall part of the stencil opening, as shown in Figs. 1 and 3. Inasmuch as such fastening strips can only be applied flatly to the stencil sheets in a straight condition, the wall of each stencil opening is made in the form of a series of straight lines which meet at an angle relative to one another, as shown in Figs. 1 and 6, with reference to the numeral "9."

Some of these fastening strips may be applied to the stencil sheet and the display surface in this manner while the bridge strips are still attached to the front side of the stencil sheet, as shown, for example, on the right part of Fig. 7, and after a sufficient number of fastening strips have been thus applied, the bridge strips 16 may be removed from the front side of the stencil sheet and fastening of this sheet to the display surface along the entire wall of its stencil opening may be completed, as shown in Fig. 1, thereby enabling a uniform outline of the character of the stencil to be reproduced on the display surface.

Means are provided for properly alining the fastening strips on the front side of the stencil sheets adjacent to the wall of the stencil openings

thereof which means may consist either of a longitudinal alining line 26 arranged centrally on each fastening strip section and adapted to be aligned with the respective wall portion of the stencil opening in case the fastening strip is made of transparent material, as shown in Figs. 1 and 7, but if these strips are made of opaque material, then the front side of the stencil sheet may be provided with gage or locating lines or marks 23, as shown in Fig. 8, relative to which the outer edges of the fastening strips may be alined for properly registering the same relative to the respective stencil opening.

In the absence of any provision to prevent it, those parts of the rear side of the bridge strips opposite the openings in the stencil sheet would adhere to the opposing exposed parts of the display surface owing to the adhesive coating on the respective parts of the bridge strips when the stencil sheets carrying these strips are applied to the display surface. To prevent such an occurrence, spacing pieces 22 are attached to those parts of the rear side of the bridge strips which cross the stencil openings in the stencil sheet, as shown in Fig. 5, these spacing pieces being attached to these strips by the adhesive coating on the rear side of the latter but the rear sides of these spacing pieces are not coated with an adhesive coating or cement and consequently do not adhere to the display surface.

When a plurality of stencil sections are applied to the display surface the adjacent vertical edges of the same preferably abut against one another in order to avoid the passing of any marking fluid or material through the joint between these sections onto the display surface and marring the finished appearance of the indicia. The preferred means for accomplishing this purpose comprises a closure strip 24 which is secured by an adhesive coating 27 to the front side of the adjacent stencil sheets and across the joint between the same, as shown in Figs. 1 and 3. For convenience in properly locating this closure strip on the respective stencil sheet, the same is made of transparent material and the same is provided with a longitudinal guide or gage line 25, as shown in Figs. 1 and 9, which is adapted to register with the joint between adjacent stencil sections.

After the stencil sheets or sections have been fastened to the display surface in the manner shown in Figs. 1, 2 and 3, the operator applies the marking material in liquid, spray or other form, by a spraying device, brush or other means through the stencil openings and against the display surfaces which are exposed within and bounded by the walls of the stencil openings and fastening strips which secure the stencil sheets to the display surface, whereby the contour of these openings and strips are reproduced on the display surface.

Thereafter the stencilling means are removed from the display surface leaving the indicia thereon in a finished condition.

These means for producing stencil markings are exceedingly simple in construction and permit of producing indicia on display surfaces which vary in character including surfaces which are uneven, curved or irregular in a manner which is convenient and expeditious and thereby materially reduces the cost of doing such work compared with the means and method heretofore employed for this purpose.

I claim as my invention:

75 Means for applying indicia on a surface com-

5

prising a stencil sheet adapted to engage its rear side with the surface intended to receive the indicia and provided with a stencil opening through which the indicia producing material is applied to said surface, a bridge piece adhesively connected with the front side of said stencil sheet and extending across the opening thereof, a spacing piece arranged within said opening and having its front side adhesively connected with the rear side of said bridge strip and having a non-adhesive rear side which faces the indicia receiving surface opposite said opening, and a fastening strip adhesively connected with the front side of the stencil around said opening and with said surface around said opening.

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6

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,227,325	Shapiro -----	Dec. 31, 1940
1,202,626	Watts -----	Oct. 24, 1916
529,464	Robinson -----	Nov. 20, 1894
631,634	Haberstroh -----	Aug. 22, 1899
2,174,567	Dahman -----	Oct. 3, 1939